CLAIMS

1. An oxide superconducting conductor having an oxide superconductor layer obtained by a method in which a raw material gas of an oxide superconductor is chemically reacted on at least one side of a base material containing Ag and deposited on the above base material; wherein,

a diffusion layer in which Cu is diffused in Ag is formed on the surface layer on the oxide superconductor layer side of the above base material, and the above oxide superconductor layer is formed on said diffusion layer.

2. An oxide superconducting provided with an oxide superconducting conductor base material provided with a base metal and an Ag layer having a rolling texture formed on at least one side of said base metal,

a diffusion layer formed by diffusing Cu in the surface layer of the Ag layer of the above base material, and

an oxide superconductor layer formed on the above diffusion layer.

3. An oxide superconducting conductor comprising the sequential generation of a plurality of layers of an oxide superconductor containing Cu by CVD on a base material for forming an oxide superconductor provided with an Ag layer having a rolling texture formed on at least one side of an Ag base material or other base metal; wherein,

among the above plurality of oxide superconductor layers, the Cu content of the oxide superconductor layer immediately

above the base material is made to have a higher concentration than the Cu content of the other oxide superconductor layers.

4. The oxide superconducting conductor according to claim 1 or 3 wherein, the base material or Ag base material is composed of pure Ag.

5. The oxide superconducting conductor according to claim 1 or 2 wherein, the Cu content of the diffusion layer is from 50 $\mu g/cm^2$ to 300 $\mu g/cm^2$.

6. The oxide superconducting conductor according to claim 1 or 2 wherein, the layer thickness of the diffusion layer is within the range of 100 nm to 300 nm.

7. The oxide superconducting conductor according to claim 2 or 3 wherein, the film thickness of the Ag layer is within the range of 10 μm to 100 μm.

8. The oxide superconducting conductor according to claim 2 or 3 wherein, a barrier layer is provided between the Ag layer and the base metal.

9. The oxide superconducting conductor according to claim 8 wherein, the film thickness of the Ag layer is within the range of 5 μm to 10 μm.

10. The oxide superconducting conductor according to claim 3 wherein, the Cu content of the oxide superconductor layer directly above the base material preferably has a concentration that is no more than 19% higher than the Cu content of the other oxide superconductor layers.

11. An oxide superconducting conductor base material that is a base material in the form of a tape for composing an oxide superconducting conductor by chemically reacting a raw material gas of an oxide superconductor on at least one side to form an oxide superconductor layer; and,

is provided with an Ag layer comprised of a base metal in the form of a tape and Ag having a rolling texture formed on at least one side of said base metal,

the film thickness of the Ag layer being from 10 μm to 100 μm.

12. An oxide superconducting conductor base material that is a base material in the form of a tape for composing an oxide superconducting conductor by chemically reacting a raw material gas of an oxide superconductor on at least one side to form an oxide superconductor layer; and,

is provided with an Ag layer composed of a base metal in the form of a tape and Ag having a rolling texture formed on at least one side of said base metal, and a barrier layer formed between the above base metal and Ag layer,

the thickness of the Ag layer being from 5 μm to 10 μm.

13. A production method of an oxide superconducting conductor in which an oxide superconductor layer is generated on a base material by a method in which a raw material gas of an oxide superconductor is chemically reacted on at least one side of a base material; wherein,

a diffusion layer in which Cu is diffused is deposited on surface layer of the above base material, and the above oxide superconductor layer is deposited on the above diffusion layer.

14. A production method of an oxide superconducting conductor comprising: a step in which a diffusion layer in which Cu is diffused is formed on the surface layer of an Ag layer of an oxide superconducting conductor base material provided with a base metal and an Ag layer having a rolling texture formed on at least one side of said base metal; and, a step in which an oxide superconductor layer is deposited on said diffusion layer by chemically reacting a raw material gas of an oxide superconductor.

15. A production method of an oxide superconducting conductor comprising: the generation of an oxide superconductor containing Cu while supplying a composition of a raw material solution of a reaction generation chamber for generating the above oxide superconductor directly on a base material so that the Cu composition is in greater excess than the above oxide superconductor composition, in the generation of a plurality of layers of oxide superconductor containing Cu by CVD on an oxide superconducting conductor base material provided with an Ag layer having a rolling texture formed on at least one side of an Ag base material or other base metal.

16. The oxide superconducting conductor production method according to claim 13 or 14 wherein, the diffusion layer is deposited to a layer thickness of 100 nm to 300 nm.

17. The oxide superconducting conductor production method according to claim 13 or 15 wherein, an Ag base material having a rolling texture of a (110) orientation is used for the base material.

18. The oxide superconducting conductor production method according to claim 15 wherein, at least two of the above reaction generation chambers are arranged in series, the composition of the above raw material solution of the above reaction generation chamber for generating the above oxide superconductor directly on the above base material is supplied so that the Cu composition is in greater excess than the composite ratio of the above oxide superconductor, and the raw material solution composition in the remaining reaction generation chamber is made to have a Cu composition that allows the obtaining of a prescribed oxide superconductor composition that is not the Cu composition of the reaction generation chambers that generates directly above the base material.

19. The oxide superconducting conductor production method according to claim 15 wherein, the Cu composition in the above reaction generation chamber for generating an oxide superconductor layer directly on the above base material preferably has a concentration that is 1-20% higher than the Cu composition in the other reaction generation chamber.

20. The oxide superconducting conductor production method according to claim 14 of 15 wherein, the thickness of the Ag layer of the above base material for forming the oxide.

superconductor is from 10 μm to 100 μm.

21. The oxide superconducting conductor production method according to claim 14 or 15 wherein, a barrier layer is formed between the above Ag layer of the above base material for forming the oxide superconductor, and the above base metal.

22. The oxide superconducting conductor production method according to any of claims 13 through 15 wherein, a protective layer composed of a precious metal material can also be formed on the above oxide superconductor layer.

23. The oxide superconducting conductor production method according to any of claims 13 through 15 wherein, the above oxide superconductor layer is composed of a YBaCuO-based oxide superconductor.

24. The oxide superconducting conductor production method according to any of claims 13 through 15 provided with: a reactor that carries out a CVD reaction that forms an oxide superconducting thin film by chemically reacting a raw material gas of an oxide superconductor on at least one side of a moving base material in the form of a tape, an oxide superconductor raw material gas supply means that supplies oxide superconductor raw material gas to the above reactor, and a gas exhaust means that evacuates the gas inside the above reactor;

the above oxide superconductor raw material gas supply means is provided with an oxide superconductor raw material gas supply source, an oxide superconductor raw material gas feed tube, and

an oxygen gas supply means that supplies oxygen gas; and,

in the above reactor, a base material feed section, reaction generation chambers and base material discharge section are respectively separated by diaphragms, a plurality of the above reaction generation chambers are provided in series in the direction of movement of the above base material tape, base material through holes are formed in each of the above diaphragms, a base material transport region is formed within the above reactor that passes through the base material feed section, the plurality of reaction generation chambers and the base material discharge section, and gas diffusion sections are provided in each of the above plurality of reaction generation chambers; wherein,

the above plurality of reaction generation chambers are made to be deposition regions, and deposition is carried out by using a deposition apparatus comprised by the above oxide superconductor raw material gas feed tube being connected to said reaction generation chambers via the above gas diffusion section.